KPDES FORM HQAA

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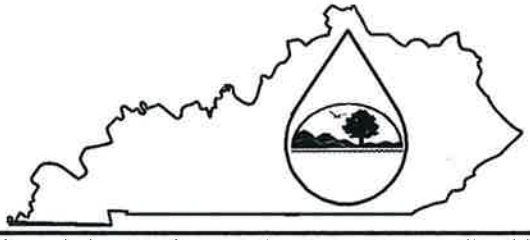

Kentucky Pollutant Discharge Elimination System (KPDES)

High Quality Water Alternative Analysis

The Antidegradation Implementation Procedures outlined in 401 KAR 5:030, Section 1(3)(b)5 allows an applicant who does not accept the effluent limitations required by subparagraphs 2 and 3 of 5:030, Section 1(2)(b) to demonstrate to the satisfaction of the Environmental and Public Protection Cabinet that no technologically or economically feasible alternatives exist and that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. The approval of a POTW's regional facility plan pursuant to 401 KAR 5:006 shall demonstrate compliance with the alternatives analysis and socioeconomic demonstration for a regional facility. This demonstration shall also include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Permit Information

Facility Name:	**Orchard Branch #1 836-5522**	**KPDES NO.:**	
Address:	**587 North Lake Drive**	**County:**	**Floyd**
City, State, Zip Code:	**Prestonsburg, KY 41653**	**Receiving Water Name:**	**Prater Creek**

II. Alternatives Analysis

	Yes	No
1. Has discharge to other treatment works been investigated? (If yes, then indicate which treatment works were considered and the reasons why that discharge to these works is not feasible.)	☒	☐

Martin Municipal Water's wastewater treatment facility is located approximately 7 miles from the project area. Discharging into this facility would require enormous capital and operational costs projected into the millions of dollars. A conservative estimate of $25/ft for the installation of 7 miles of transmission lines would cost in excess of $900,000 alone. In addition to the cost of the pipe, there are the additional costs of acquiring right-of-way and easement agreements along with the installation of multiple lift/pump stations as well as having to lay pipe under the Levisa Fork of the Big Sandy River to be able to properly access the treatment facility. These costs could not be absorbed as part of a successful and safe mining operation. Another transportation option would be to utilize trucks. A fleet of trucks capable of handling the potential discharge would cost in excess of $300,000. Additionally, the operation and maintenance costs would be an excessive burden on successful mining operations. Increased traffic on public roads also presents public safety concerns. Ultimately, the Martin system was not designed to handle the excess load that would be required for this mining operation.

Prestonsburg City Utilities Commission is located approximately 9 miles downstream in Prestonsburg, Kentucky. However, due to the above stated reasons the facility could not be utilized without additional sedimentation controls installed.

Though a package wastewater treatment facility was considered and investigated as an alternative, there were no such facilities available for use in the area.

	Yes	No
2. Have other discharge locations been evaluated? (If yes, then indicate what other discharge locations have been evaluated and the reasons why these locations are not feasible.)	☒	☐

See Attachment HQAA II, 2

HQAA Section II, 2

Several other discharge locations were investigated.

The nearest impaired water is located approximately 7 miles from the discharge site near Martin, Kentucky. Per the economic evaluation outlined in Item 1, installation of a 7-mile piping system that would have to be diverted under the KY Route 80 to access the impaired waters would cost in excess of $2 million.

The steep terrain surrounding the mine site places limitations on safe storage of excess spoil. One additional site to the west of the proposed discharge, located in an unnamed tributary, was ruled out due to the presence of gas wells, gas transmission lines, and lack of right-of-entry. A discharge site was investigated east of the proposed discharge site and was ruled out due to gas transmission lines and population. Ultimately, discharge into another watershed and/or stream would simply cause the same problems in another location.

Natural gas transmission facilities prohibit necessary mining activities and lead to higher capital expenditure. Properties lacking appropriate right-of-entry lead to increased capital expenditure. These issues have been taken into consideration in the final selection of the discharge location.

II. Alternatives Analysis – continued

	Yes	No
3. Has water reuse or recycle been investigated as an alterative to discharge? (If yes, then provide the reasons why it is not a feasible alternative	☒	☐

Water recycle has been investigated as an alternative to discharge. Although a portion of the runoff will likely be used for dust suppression activities it is not possible to recycle the vast volume of surface runoff as an alternative to discharge.

The total drainage area for the three ponds is approximately 173 acres. An average annual rainfall of 51 inches (standard annual rainfall amount for Floyd County) will yield over 239 million gallons of water per year. Average recycling capacity for any mine operation is between 1.5 and 2 million gallons of the water annually. As was stated before neither Martin Municipal Water nor Prestonsburg City Utilities Commission have wastewater treatment plants that can handle this amount of runoff without the installation of more sedimentation controls. This could end up costing the wastewater treatment plants in excess of $1 million dollars each just to upgrade their systems capacity.

Watering of reclaimed lands was also considered as a possible reuse for the surface runoff. However, since the slope of the area is greater than 6 percent, the absorption rate would not support land application.

	Yes	No
4. Have alternative process or treatment options been evaluated? (If yes, then indicate what process or treatment options have been evaluated and provide the reasons they were not feasible.)	☒	☐

Several other mining options were considered for the proposed project. Mountaintop, Area and Contour Strip mining were ruled out do to mining ratios, limited spoil storage area and lack of right-of-entry.

A combination of hay bales and silt fences were considered as an alternative to degradation. This system was determined to be unfeasible due to the elevation, grade, and size of the disturbed area to adequately handle the anticipated runoff.

The construction of a flocculent water treatment plant was considered as an alternative treatment option but was considered but not pursued due to the unpredictability of runoff rates and the high costs of installation, operation, and demolition. Installation of the treatment and piping system alone would cost over one million dollars.

II. Alternatives Analysis – continued

	Yes	No
5. Have on-site or subsurface disposal options been evaluated? (If yes, then indicate the reasons they were not feasible.)	☒	☐

The installation of either a sanitary septic system or a leach system was considered. In order to store 239 millions gallons of runoff would require the purchase of at least 20,000 septic tanks each costing upwards of $15,000 each (roughly $300 million dollars total). There are no areas in the vicinity of the mining area large enough to accommodate an operation of this magnitude. Add to the purchase of the storage tanks the cost of clean up and removal of the tanks and/or leach bed system and an operation of this size would be financially debilitating for this mining operation.

Discharging into old mine works near the site was considered as another alternative. A build up of water in these abandoned mines not only would present various health and safety concerns for the public and environment but also could cause problems within the proposed mine by exposing workers and equipment to the dangers of seeping water. Additionally, injection of water into these mine works would eliminate the possibility of future mining in the vicinity of the flooded seam.

	Yes	No
6. Have any other alternatives to lowering water quality been evaluated? (If yes, then describe those alternatives evaluated and provide the reasons why these alternatives were not feasible.)	☒	☐

Abandoning the mining proposal as an alternative to lowering water quality was evaluated. The anticipated 200 direct and indirect jobs, coal severance tax funds that can potentially reach nearly $3 million, potential income taxes that could potentially reach $300,000 annually and much needed community infrastructure would not materialize if this mining proposal were to be abandoned.

Accepting the legal discharge limits to collect, store and treat all surface runoff would present unacceptable economic constraints on a safe and successful mining operation. As has already been stated and illustrated, the costs of implementing an on site storage and treatment facility could reach into the area of $195 million dollars just for the storage tanks alone not including the costs of chemicals to treat the discharge with that can run in excess of $800,000 per year. Accepting the discharge limits and implementing alternative procedures to treat the water to an acceptable level would place financial constraints upon the operation that could not be overcome.

III. Socioeconomic Demonstration

1. State the positive and beneficial effects of this facility on the existing environment or a public health problem.

The area in which the potential operation is located has been subjected to pre-law mining and approximately 100 acres of logging operations. There are also gas wells and gas transmission lines located within the permit boundary that will receive proper sediment control.

2. Describe this facility's effect on the employment of the area

The unemployment rate of this area of Floyd County is approximately 7.6%. The proposed operation will have a positive effect on the employment of the area by employing approximately 100 individuals. In addition, there will be approximately 100 other job opportunities created as a result of this operation. These include but are not limited to transportation, equipment purchasing, equipment repair and maintenance, food service, etc.

3. Describe how this facility will increase or avoid the decrease of area employment.

The job market for this area of Floyd County saw a decline of nearly 3% over the course of the last fiscal year while population of the area has increased approximately 22% since the 2000 census. With this trend in the area's workforce, the unemployment rate will continue to climb and will continue to be higher than both the state and national averages (5.3% and 4.6% respectively). This operation will directly employ approximately 100 on site and off site personnel who will be in charge of day to day operation and processing of the product thereby having a positive effect not only on the employment rate but also on the economy of the area.

. Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.

This operation has the potential to remove nearly 3 million tons of coal. In removing this product and placing it in the marketplace, upwards of 200 direct and indirect jobs will be created and nearly $7 million dollars of severance tax money could be returned to Floyd County based on current coal prices. This money can be utilized to improve road conditions throughout the county, update educational facilities and equipment for the betterment of the career opportunities available for the children and families within the area, and improve other vital services needed to provide for a more well balanced community. In 2005, Floyd County received in excess of $4 million coal severance tax dollars. This operation will continue that trend and contribute to the tax base of this area.

5. Describe any other economic or social benefits to the community.

See Attachment HQAA Section III, 5

KPDES Form HQAA Attachments
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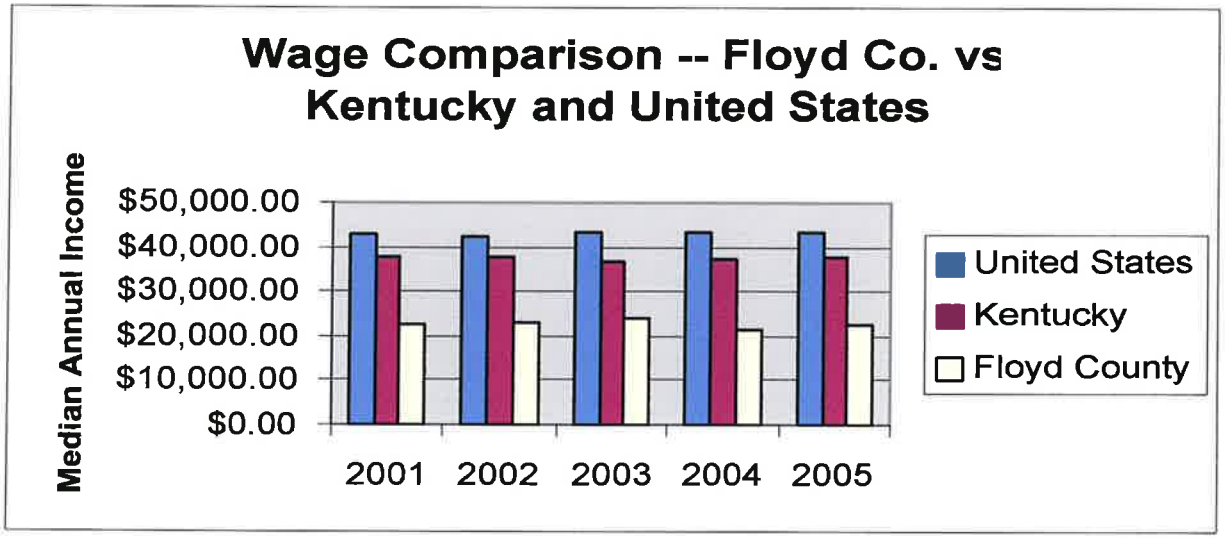
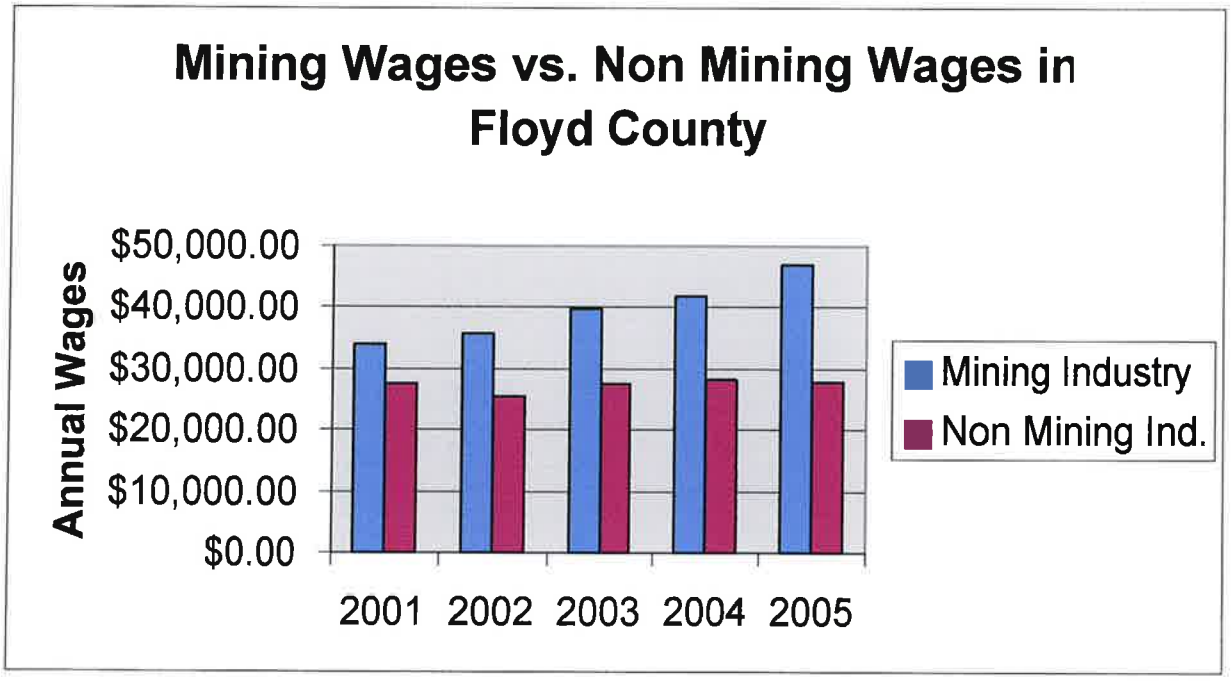
HQAA Section III, 5

According to the 2000 census, the median annual income for this area is less than $22,000; which is below both state and national averages of $36,000 and $43,000 respectively. See the following chart.



The proposed operation will provide significantly higher paying jobs in the $35 - $50,000 range thereby increasing the median income. See the following chart.



HQAA Section III, 5 - (Continued)

Higher waged jobs will result in increased discretionary income for area families resulting in a better quality of life by allowing families to pay down personal debt, invest in their future retirement, open up educational opportunities for their children, afford better healthcare, and participate in more entertainment and pleasure purchases. Additionally, tax revenues will also lead to increases in educational, transportation and utility infrastructure.

By lowering unemployment and promoting underemployed personnel into higher wage positions the citizens of the community will benefit socially by realizing a sense of accomplishment and purpose translating into happier people. This not only benefits the local residents but also lessens the tax burden on the middle and upper classes.

III. Socioeconomic Demonstration – continued

	Yes	No
6. Will this project be likely to change median household income in the county?	☒	☐
7. Will this project likely change the market value of taxable property in the county?	☒	☐
8. Will this project increase or decrease revenues in the county?	☒	☐
9. Will any public buildings be affected by this system?	☐	☒

10. How many households will be impacted by this project? 200-300

11. How will those households be impacted?

Economic –

In Floyd County in 2005, average mining related wages were 59% higher than non mining industry wages according to Kentucky Coal Facts/Wages by County. See Attachment HQAA Section III, Question 11. As a result of this operation the families of the area will have a better economic status than they are currently experiencing.

Social –

The social benefits of this operation include improvements to many vital services within the community. The revenues generated from the higher wages will result in improved educational opportunities and medical services as well as improving the infrastructure of the area

	Yes	No
12. Does this project replace any other methods of sewage treatment to existing facilities? (If so describe how)	☐	☒

There are no ongoing treatment activities within the permit boundary.

	Yes	No
13. Does this project treat any existing sources of pollution more effectively? (If so describe how.)	☒	☐

There are currently three gas wells within the permit boundary that will receive proper sediment control with the implementation of this project. As stated previously, there is an existing pond on the premises that will be restored and utilized for the current operation. Also, an existing haul road on the property will be resurfaced and used for the purpose of transporting the product from the site.

Implementation of the BMPs required by the permitting process for the Department for Natural Resources will not only reduce existing problem areas but will also minimize the impact of the proposed mining operation upon the surrounding environment.

III. Socioeconomic Demonstration - continued

	Yes	No
14. Does this project eliminate any other sources of discharge or pollutants? (If so describe how.)	☒	☐

See Attachment HQAA Section III, 14

15. How will the increase in production levels positively affect the socioeconomic condition of the area?

See Attachment HQAA Section III, 15

16. How will the increase in operational efficiency positively affect the socioeconomic condition of the area?

See Attachment HQAA Section III, 16

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	**Wesley R. Jones, Chief Engineer**	Telephone No.:	(606) 889-8440
Signature:	Wesley Jones	Date:	10/25/07

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HQAA Section III, 14

The area surrounding the proposed mine site has been subjected to previous mining operations and natural gas production.

By implementing the Best Management Practices required in the coal permitting process, this operation will seek to both minimize further degradation to the environment as well as reclaim previous areas turning them into environmentally friendly habitats for all forms of wildlife.

HQAA Section III, 15

This project will remove approximately 3 million tons of coal that would not have been available for market use otherwise. This will result in the employment of approximately 100 workers directly involved in the extraction and processing of the product. By so employing these people, the proposed operation will be aiding in the development and maintenance of additional jobs within companies that will be indirectly affected by the economic benefits of this operation. As a direct result of the creation and maintenance of these jobs, the area will see an increase in personal (potentially $300,000 dollars annually) and severance tax dollars (nearly $7 million for the life of the operation) thereby being able to better provide the basic services that make for a happier and healthier community.

HQAA Section III, 16

The proposed operation is an underground operation with the following benefits:

There will be little or no surface disturbance therefore there will be less runoff and less impact on the aquatic habitats and environments.

Because the disturbance will be underground rather than surface there is less negative effect on the view shed of the people of the area meaning they do not have to see the disturbance of the mining operation on a day to day basis.